



ARL is an Authority on Nutrition and the Science of Balancing Body Chemistry Through Hair Tissue Mineral Analysis!

Hair Tissue Mineral Analysis


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Chromium Debate

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The Debate Over Chromium

Chromium is an essential trace mineral and one that is measured on a hair mineral analysis. Low chromium is associated with impaired glucose tolerance that affects as many as 75% of Americans. Recently, a health newsletter warned of chromium toxicity. Also, many people wonder which form of chromium is best.

Chromium Research

The value of chromium was first discovered in 1957, when a pork kidney extract was given to rats with glucose intolerance. The substance improved their glucose intolerance so much the mysterious chemical was named 'glucose tolerance factor', or GTF. It was shown to improve the action of insulin and facilitate the uptake of glucose into the cells. In 1959, research continued and the active ingredient in GTF was isolated - the trace mineral chromium.

Since then, well-controlled studies on patients with diabetes, hypoglycemia and other glucose tolerance problems have shown that chromium supplementation improves glucose metabolism. It is helpful for pregnancy related diabetes, diabetes induced by steroids, as well as the more common adult-onset diabetes. Many patients report chromium supplements help reduce sweet cravings and may improve energy levels.

More recently, studies have shown chromium is also helpful for improving body composition, reducing fat and increasing lean muscle mass. Dr Paul C. Eck studied chromium using hair mineral analysis. He found it tends to increase the hair sodium level and increase the oxidation rate as measured on a hair mineral analysis.

Chromium Toxicity

A while back, the Berkeley Wellness Letter and other news articles warned of possible toxicity of chromium supplements based on two studies. A review of each study shows that they bear little relation to normal supplementation of chromium.

In a 1996 study, hamster cells were exposed to extremely high concentrations of chromium (3000 times higher than the amount found in supplements). Researchers concluded that this amount could cause chromosomal damage in hamster cells. However, numerous toxicity studies of chromium on real animals and humans, including those by the U.S. Department of Agriculture, have shown no toxic effects in physiological doses on animals or humans. In one study, rats fed 100 mg/kg of chromium picolinate (equal to several thousand 200 mcg tablets for a human) showed no signs of toxicity.

The second study merely observed a chemical reaction between chromium, vitamin C and other anti-oxidants. They observed that the reaction might cause free radical damage. Such reactions in test tubes are common, but have little to do with reactions within a living body.

Scientific studies must be read and interpreted carefully. It is unfortunate that some health newsletters may frighten people with irrelevant data.

Types Of Chromium Supplements

The daily requirement for chromium is thought to be 50-200 mcg per day. High-chromium foods include black pepper, brewer's yeast, molasses, wheat germ, oysters, liver, egg yolks, peanuts and kidney. Government studies indicate most people do not even ingest 50 mcg per day. Processed foods are usually stripped of their chromium. These include white bread, white rice, frozen vegetables, white sugar and all products made with these ingredients. Consumption of these foods actually increases the need for chromium. Therefore, supplementation can be important.

Which is the best form of chromium to supplement? One can obtain GTF from yeast, chromium chelate, chromium picolinate and chromium polynicotinate. These differ in the carrier molecule or transporter that is attached to the chromium ion. Different carriers can affect the absorption of a mineral.

In our experience, all the above forms of chromium are well-absorbed and highly effective. Some studies indicate the polynicotinate or picolinate forms may be slightly better absorbed. However, chromium chelate has been used for years with success. If one is not allergic to it, brewer's yeast is an excellent food source of not only chromium, but also selenium, protein and B-complex vitamins.

Why Is Extra Chromium Not Always Recommended?

Even though most people could use extra chromium, it is not always recommended on ARL supplement programs. This occurs even when the hair levels are low, or a person reports symptoms of glucose intolerance or elevated cholesterol.

The program is set up this way to avoid overwhelming patients with very large and costly supplement programs.

The advice of a physician or nutrition consultant can be most helpful. Anyone with diabetes, glucose intolerance, elevated cholesterol, atherosclerosis, starch or sweet cravings, or desiring to lose weight naturally may be helped with supplementary chromium, at a dosage of 400 to 800 mcg per day. There is no known toxicity of chromium at these levels. Although rare, a person may be sensitive to any substance.

References

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